

## Color Variation in *Cypraecassis rufa* (Linnaeus)

BY

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(2 Text figures)

*Cypraecassis rufa* (Linnaeus, 1758) is a common Indo-Pacific cassid species that occurs in several color patterns. There are 3 main color phases in *C. rufa*: brown, red, and orange. All variants in the species have the same basic color pattern.

The first 3 whorls of the spire have no distinct colors. The last 4 whorls are decorated with large dark and light vertical stripes. The stripes increase in size as the spire gets to the last whorl. The border line between the dark and light stripes is not sharply defined, but is rather a hazy area that is a mixture of the stripes' colors. The dorsal side of the shell has 3 large vertical stripes. There is one

dark stripe between 2 light stripes. On the dorsal side of the outer lip there is a vertical column of light and dark horizontal bands. The line where a dark band and a light band meet is distinguishable. These bands are pattern extensions of features on the spire, the light bands extensions of the row of knobs and the dark bands extensions of the spiral cord regions. There are thin light bands present in the dark bands which are not easily distinguishable. Each light band present in the larger dark one is the extension of one spiral cord. The anterior end of the shell has a large dorsal canal.

The inner and outer lips on the ventral side have dark and light bands that extend across vertically. A line can be distinguished where dark and light bands meet. The bands on the outer lip are extensions of those found on the



Figure 1

Ventral side of shell showing the horizontal bands on the inner and outer lips



Figure 2

Dorsal side of shell showing vertical stripes on the whorls and the horizontal bands above the outer lip

dorsal side of the shell. The bands on the inner lip are larger and fewer in number than those on the outer lip. The bands on both lips are variable in size and occasionally have some interruption of the other band color in them. The color of the bands may vary in shades. Both lips have rows of white teeth at the aperture of the shell. The outer lip has about 17 teeth with a dark area around all of them. The inner lip has about 32 teeth with white ridges that extend into the lip. The area inside the ridges is black and there is a dark area surrounding the ridges. The dark areas around the teeth on both lips are the same color as the interior of the aperture.

**Brown Phase:** The first 3 whorls vary in color from tan to dark brown. The last 4 whorls have large vertical stripes colored livid pink (MAERZ & PAUL [hereafter cited as MP]: 125; plt. 51) and zanzibar brown (MP: 39; plt. 8). The dorsal surface has one zanzibar brown stripe and 2 livid pink stripes. The zanzibar brown stripes occasionally have patches of orchis pink (MP: 127; plt. 52). On the dorsal surface of the outer lip the horizontal bands are opal mauve pink (MP: 125; plt. 51) and egg plant purple (MP: 119; plt. 48). The canal at the anterior end is burnt orange (MP: 39; plt. 3).

On the ventral side of the shell the inner and outer lips have bands colored Ponce de Leon orange (MP: 45; plt. 11) and amber white (MP: 45; plt. 11). The area around the teeth and the interior of the aperture are tomato red khiva (MP: 29; plt. 52).

**Red Phase:** The first 3 whorls vary from brown to red. The last 4 whorls have vertical stripes colored india red

(MP: 37; plt. 7) and agate gray (MP: 109; plt. 43). On the dorsal surface there are one india red stripe and 2 agate gray stripes. The horizontal bands on the dorsal side of the outer lip are white and dark admiral blue (MP: 119; plt. 48). The canal at the anterior end is buccaneer red (MP: 31; plt. 4).

On the ventral side of the shell the bands on both the inner and outer lips are brazil red (MP: 31; plt. 4) and light flesh blond (MP: 31; plt. 4). The area around the teeth and the interior of the aperture are buccaneer red.

**Orange Phase:** The first 3 whorls vary from white to tan. The last 4 whorls have stripes colored talvera orange (MP: 47; plt. 12) and light white jade (MP: 43; plt. 10). On the dorsal surface there are one talvera orange stripe and 2 light white jade stripes. On a talvera orange stripe there is occasionally a patch of leaf mold brown (MP: 39; plt. 8). The dorsal surface of the outer lip has bands which are amber yellow (MP: 43; plt. 10) and java brown (MP: 39; plt. 8). The canal at the anterior end is jacinthe orange (MP: 43; plt. 10).

The ventral side has bands colored capricorn orange (MP: 41; plt. 9) and marguerite yellow (MP: 43; plt. 10). The area around the teeth and inside the aperture is navaho orange (MP: 43; plt. 10).

### Literature Cited

- MAERZ, ALOYS J. & M. REA PAUL  
1930. A dictionary of color. vii+207 pp.; 56 pls. McGraw-Hill  
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